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Measuring sustainable development in follow up to Rio+20**Experiences with sustainability indicator reporting and well-being measurement in Germany – a dialogue between the political and statistical communities****Note prepared by the Federal Statistical Office of Germany***Summary*

This paper focuses on the experiences of Germany with sustainable development indicators. The paper discusses the communication of sustainable development indicators and more specifically the assessment of the progress made using quantitative target values. It addresses the issue of how this experience at national and international levels could benefit the process of developing global Sustainable Development Goals. The question of when the national and international statistical agencies should be integrated in the process of setting Sustainable Development Goals is considered. The role and responsibility of official statistics versus policy makers and governments in the process is also examined.

While politicians mainly define policy programmes and the related standards and are responsible for the developments, statisticians focus on giving methodological advice, providing data and assuring the quality, making analyses and reporting on indicators. An on-going dialogue between the political and statistical communities is needed to achieve optimum results. Involving statisticians as early as possible is to the benefit of both parties. Furthermore, the independent role of official statistics also profits the credibility of the political community and the monitoring of sustainable development strategies.

I. Introduction

1. Political programmes are judged by their success. Concrete and measurable political goals, data and indicators are needed to check on success, together with close monitoring from a politically neutral stance. Sustainable development is an example of a socio-political goal to which great importance is attached in global, national and regional terms. Through the Rio Convention of 1992, this guiding principle of politics was established at international level. Building on this, many countries and the European Union (EU) have since introduced their own sustainable development strategies and regularly report on the subject. At international level, the sustainability process was last continued in 2012 by the Rio+20 Conference. One of the main topics of that summit was implementing sustainability in everyday economic life by transition to a green economy, if possible. The outcome document also states that broader indicators of well-being are considered a necessary supplement of Gross Domestic Product (GDP).¹ Here a connection is revealed with the results of the Stiglitz-Sen-Fitoussi Report and expanded reporting on well-being.

2. According to the Rio+20 outcome document entitled “The future we want”, it will be “important and useful ... to define a set of sustainable development goals (SDGs)”². These goals should, among others, be action-oriented, concise, easy to communicate, limited in number, and governments should drive their implementation (§247). Then it says “we recognize that progress towards the achievement of the goals needs to be assessed by targets and indicators ...”³ and “we recognize that there is a need for global, integrated and scientifically based information on sustainable development ...”⁴

3. This is the interface between the political programme on the one hand and success measurement on the other. The monitoring of sustainable development is a process which must be based on the dialogue between the political and statistical communities. In the section to follow, we will look at the distribution of tasks between these two spheres, and in doing so rely on the experience gathered in two processes where politicians and statisticians have co-operated on similar topics in Germany. These are:

(a) The sustainability reporting we have in place in Germany, based on the Federal Government’s *National Sustainable Development Strategy* introduced in 2002. After being involved only marginally at the beginning, the part of the official statistical agencies in that strategy is now acknowledged;

(b) Setting up a reporting system on well-being and the quality of life is a field where co-operation has started recently as a consequence of the Stiglitz-Sen-Fitoussi Report with the aim of covering societal progress. Here co-operation takes place in the framework

¹ “We recognize the need for broader measures of progress to complement gross domestic product in order to better inform policy decisions, and in this regard we request the United Nations Statistical Commission, in consultation with relevant United Nations system entities and other relevant organizations, to launch a programme of work in this area building on existing initiatives.” United Nations, *The future we want*, A/RES/66/288 of 11 September 2012 (§ 38).

² “We further recognize the importance and utility of a set of sustainable development goals.” (§ 246).

³ “We recognize that progress towards the achievement of the goals needs to be assessed and accompanied by targets and indicators, while taking into account different national circumstances, capacities and levels of development.” (§ 250).

⁴ “We recognize that there is a need for global, integrated and scientifically based information on sustainable development.” (§ 251).

of the Study Commission on Growth, Well-being and Quality of Life, which was established by the German Bundestag at the beginning of 2011.

II. Distribution of tasks between the political and statistical communities in Germany

4. The distribution of tasks between politicians and statisticians results from the fact that the following areas should be kept separate as far as possible: normative activities which are evaluative in socio-political terms on the one hand and rather descriptive, statistical analytical and advisory tasks on the other.

A. Selection of indicators

5. Drawing up a political programme, be it explicit or implicit (the latter would consist of very general targets such as: “society should develop in a more sustainable manner “ or “prosperity and the quality of life should increase“), is a normative political task. The ideas of the ruling party or of political coalitions are reflected. In Germany, great importance is assigned to this task as the responsibility for the *National Sustainable Development Strategy* rests with the Federal Chancellery, which is close to the Government. Here, the ideas of the ministries can be pooled.

6. Generally, political bodies are also responsible in the beginning for choosing the conceptual framework (e.g. “what is the range of important topics and which of those have priority?“). The resulting “policy-guided“ concepts stem mainly from the topics that are current at the time and regarded as politically relevant. Since the political situation is the starting point, statistical agencies only seldom provide a framework of topics and indicators, and if they do, it is of a more systematic nature and conceptually guided.⁵ However, the political community discusses the suggested topics with experts and invites the public to join the discussion.⁶ Statisticians, too, can provide support – through statistical surveys and analyses – in the process of selecting the influencing factors relevant to attaining societal goals such as a good quality of life and societal progress. For example, surveys on the life satisfaction of the population can be used to derive information on the question of which factors influence subjective life satisfaction to what extent.

7. When the relevant influencing factors have been determined (for sustainability or quality of life), indicators are selected to measure them. This concerns the core competency of statistical offices, which is measuring. At this point, statisticians can provide support in many respects, for instance by answering the following questions:

- (a) What indicators are suited to reflect the influencing factor concerned?
- (b) Are official or other data available?
- (c) How reliable, precise and current is the indicator? Is the quality assured in accordance with the *European Statistics Code of Practice*?
- (d) Is the indicator internationally comparable and robust?
- (e) What improvements can be made in the short, medium and long term?

⁵ Examples of conceptual frameworks are the DPSIR approach (Driving Forces, Pressure, State, Impact, Response) and the “capital approach”.

⁶ For instance, there is a “dialogue on sustainability“ between policy-makers and the general public in the digital network which is supported by the government.

(f) Are there alternative or supplementary indicators?

8. Experience shows that statisticians are expected to give answers to these questions. Such advisory activities presuppose a good overview of official and non-official statistics and the methods used. Statistical impartiality may help to reconcile diverging political interests.

9. It has turned out that the selection of indicators is based on an on-going dialogue between the political community and the experts it has chosen, with statisticians playing a very important part in the process. Politicians take the initiative and statisticians give advice. The final decision is then taken by politicians because they are responsible for the programme for which the indicators are needed. The selection includes also the number and the aggregation level of indicators. Roughly, three stages can be distinguished here: a universal indicator, a composite indicator and a set of elementary indicators. A universal indicator such as the GDP and a composite indicator like the Human Development Indicator reflect the development by means of a single figure. In contrast, a set of indicators comprises several elementary indicators of the same level. Such sets are used for sustainability strategies and the *How's life* approach of the Organisation for Economic Co-operation and Development (OECD). As these aggregation levels differ with regard to their prerequisites on the one hand and – depending on the purpose they are intended for – their specific benefits and shortcomings on the other, statisticians can make a contribution so that a well-founded decision may be taken on the aggregation level.

B. Determining target values

10. The binding character of an indicator-based political programme and the incentive to implement it are much stronger when target values have been specified. It is noteworthy that most of the German sustainability indicators have been linked with quantitative target values and target years. Setting target values for indicators (intended directions, quantitative target values, target years) clearly is a normative, and therefore, a political task. However, statisticians are needed as advisors. They provide support in the process of determining quantitative target values by supplying time series for the indicators selected. The time series show the development in the past and thus provide clues as to what levels would be reached in the foreseeable future under identical conditions. The target values set in the end have to be seen as compromises which result from weighing up very different aspects. These include expert reports (as provided by scientists on critical loads in the environmental field to avoid damage); the extent to which developments can be influenced by management activities at national level; fundability considerations regarding the measures required; the prospect of success (as early as possible); the risk assessment of consequences which may arise from undesirable developments or different priority setting by parties and ministries. Sometimes decisions have to be taken on the basis of incomplete knowledge.

11. The indicators proposed for measuring well-being lack target values set by the political community. Some indicators have quantitative warning thresholds instead. Such an indicator would “illuminate“ kind of a warning light when the value exceeds or falls below a specific threshold.

12. At this point, it should be mentioned that different topics and indicators may be linked and that there may be conflicting targets. In addition to conflicts between the three dimensions of sustainability – economy, social matters and the environment – there may be conflicts between indicators of the same dimension. Conflicting targets and links between sustainability indicators are a complex field and covering it more systematically will be a challenge of the future.

C. Continuous reporting

13. A political programme like the one on sustainable development will be appreciated more if the reporting is clearly objective. This is one good reason why the regular reports on the development of sustainability indicators are not prepared by the ministries themselves anymore – which they were at the beginning of the sustainability process in Germany – but by the Federal Statistical Office. It would be good if the Federal Statistical Office would be commissioned to report on well-being, too. Reporting includes the provision of data, the graphical presentation and description of indicators, analyses of developments and their background and an assessment of indicator developments (see below for details). Official statistical agencies are committed to independence and impartiality (as laid down in the “Code of Practice”) and prepare the reports as transparently as possible and under their own responsibility. It has turned out that this independence has to be claimed every now and then in the regular dialogue with the political community.

14. Due to their extensive experience with various media and communication strategies, statisticians are in a position to prepare proposals as to how the indicators are conveyed to the general public and how they are perceived. Sustainability indicators are communicated by means of indicator reports (both printed and online).⁷ Data series are provided online. They are easy to use, to the point and use symbols (for details see below) – these are the features by which the reports are to convey information more easily. Although composite indicators are called for now and then because they enable more rapid and at the same time more comprehensive orientation, there was a clear decision against using them in the sustainability strategy as they are not transparent. This opinion is held not only by official statistical agencies in Germany, it is shared by the political bodies presently responsible for the *National Sustainable Development Strategy*.

15. The indicator reports of the Federal Statistical Office are a product which is in relatively high demand. The complete sustainability strategy concept is communicated also by the Federal Chancellery, which is in charge of the matter.⁸ The Federal Government publishes Progress Reports on the *National Sustainable Development Strategy*. Apart from policy parts, they also contain independent contributions of the statistical agencies, which are identified as such. Experience shows that the media do not often cover the sustainability indicators as a complete set in their reporting on the politics of the day.

16. To be able to react to changed circumstances, newly arising problems or new findings, the sustainability strategy has to be revised and updated at regular intervals, even though it is a long-term strategy. Partly, this leads to an adjustment of indicators to new situations. Indicators are modified, deleted or replaced, the composition and scope of an indicator set changes.⁹ This process is part of the dialogue between the political and statistical communities, with statisticians giving advice especially on methods and data availability. It may also be that politicians wish to change quantitative target values and years. A modification of framework conditions may alter also the indicator-based assessment of success without there being a corresponding change in reality. Apart from that, adjustments are inevitable whenever target years are reached and an updating of target values and target years becomes necessary. This causes breaks in the time series which are

⁷ Federal Statistical Office (2012): Sustainable development in Germany – Indicator Report 2012

⁸ Federal Government: National Sustainable Development Strategy 2012 – Progress Report. www.bundesregierung.de

⁹ For instance, three new indicators (primary energy consumption, government debt, structural deficit) were included into the Indicator Report 2012 on sustainable development, and another three indicators were modified.

due to definition. Statisticians then have the particularly important task of referring to the breaks and pointing out that framework conditions have been changed, maybe also in spite of resistance from the political community. In this situation, the user is called upon to read the report very carefully, also the footnotes.

III. Indicator-based assessment – the focus of statistical work

17. Sustainability reporting in Germany attaches particular importance to indicator-based assessment. This is mainly about evaluating the development of sustainability indicators statistically. Normative aspects are basically limited to defining assessment classes, which are used to classify indicators according to their development. This makes it possible to communicate results in a simplified manner. The way in which sustainability indicators are assessed was proposed and devised by statisticians. The fact that statisticians assumed this task met with some resistance from the political community in the beginning. The problem is that, together with the indicator, the policy itself is indirectly evaluated, too. Ministries agree more readily to an assessment by the statistical agencies if they are responsible for “successful” indicators and less readily if their indicators have developed not so favourably. This shows how important independent reporting is.

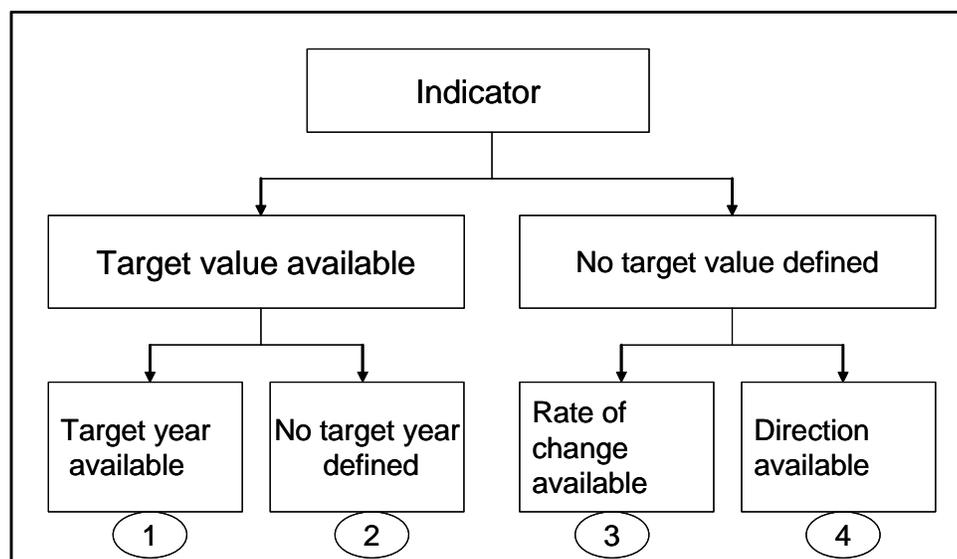
18. The statistical options for indicator-based assessment depend on many factors. These include the data situation, the scope of attributes available for an indicator (e.g. type of targets) or the decision in favour of specific calculation rules. Sustainability indicators are reported on and assessed in several countries of Europe and by Eurostat. Often the countries’ sustainability indicators refer to similar topics while assessment procedures have been developed independently of each other. Consequently, identical developments may yield different assessment results. A group of experts (Expert Group on Indicator Based Assessment co-ordinated by the Swiss Federal Statistical Office) of the Eurostat Working Group on Sustainable Development Indicators has dealt with these issues and prepared a methodology handbook on indicator-based assessment.¹⁰ It describes the methods used by the countries involved and enables a tentative comparison of results by means of examples.

19. In view of the methodological options of statistical assessment, the indicators are classified to four types in the handbook (see Chart 1). The decisive factor is the information available for an indicator. In the most favourable case, a sustainability indicator has both a quantitative target value and a target year (type 1), in the second case, it has a quantitative target value but no target year (type 2). Where neither target values nor years have been defined, an annual rate of change may have been specified (type 3) or at least the direction in which the indicator should hopefully develop (type 4). Certain specifications regarding content and methodology are required for each type. Requirements are the highest for an assessment of type 1. In addition to the necessary targets, the following have to be defined, among others: base year of the time series, reference year and latest value as a basis for assessment, methods for calculating the development and the distance to the target, assessment classes and their thresholds for admissible deviation.

¹⁰ Eurostat Expert Group on Indicator Based Assessment: Getting messages across using indicators - A handbook based on experiences from assessing Sustainable Development Indicators”; publication in preparation (2013)

Chart 1

Classifying statistical methods for assessing sustainability indicators by four types
 (Source: Eurostat Expert Group on Indicator Based Assessment: Getting messages across using indicators. Draft, 2013)



20. Without going further into the subject or into technical detail, we would like to give an example to illustrate the procedure followed in the German indicator report. On the basis of the information available, most indicators can be assessed in line with type 1 of the indicator-based assessment (see Chart 1; though there are indicators to which types 2 and 4 apply). In this case the assessment proceeds from a specific computational update (no forecast) of the indicator time series. First, the potential indicator value in the defined target year is determined on the basis of the development which the indicator has shown in the period between a specific reference year (which has been determined statistically) and the latest year of the time series for which results are available. The indicator-based assessment considers also the percentage to which the indicator would have reached the target value in the target year. This is based on the distance potentially covered from the (politically determined) year in which the indicator was introduced until the target year.

21. To simplify communication, only few assessment classes have been fixed. For a more flexible class definition, thresholds have been established between the classes in some cases. For instance, a target has also been attained, by definition if – within the best of four assessment classes – the difference remaining to the target value in the target year would be (or is) below 5 per cent. The results of the statistical assessment are presented graphically in the form of pictograms (here: weather symbols) so that they can be grasped more rapidly. These symbols are used for assessment also in the other classes, which we will not deal with in more detail here. Even before target years have been reached, indicator-based assessment makes it possible to state whether an indicator would attain the goals set if it continued to develop as before or whether efforts would have to be intensified, or whether its development is insufficient or even taking the wrong direction.

22. The question is whether a specific method of indicator-based assessment has proved particularly suitable in the light of the experience gathered in various countries. Statements

can be made for two different areas here. On the one hand, they refer to the specifications of the political community, which influence the indicator assessment potential. From our viewpoint, the commitment to target values and target years for indicators (in line with the assessment method of type 1) increase the binding character and assessability of a sustainability strategy. Therefore, it is desirable for an indicator to have such attributes, if possible, although it must be underlined that the statistical community cannot determine these attributes – and does not want to anyway. On the other hand, there is the question whether a recommendation can be made also for the statistical methods to be used. One conclusion drawn by the Expert Group is that a general recommendation for a “best practice“ cannot be given. It argues that the selection of methods depends also on the specific indicator-related conditions. Great importance was attached, however, to ensuring that the methods used be communicated in a clear and transparent manner. Only this would make them comprehensible and enable a comparison of the results obtained by different users.

23. In their conclusions following the comparison of methods, the Expert Group deals also with the problem of simplification, which is the inevitable consequence of an eye-catching assessment by classes. It states “that indicator-based assessment is a simplification of the message given by indicators that are themselves a simplification of reality. ... delivering a simple message implies being aware of the complexity that hides behind, in order to avoid delivering a simplistic message.”¹¹ This is to say that the user should by no means use the assessment results without drawing upon additional information, though the results seem to be easy to grasp in no time due to the symbols. In turn, transparent reporting is called upon to provide that information. If possible, the subject of statistical significance should be also dealt with.

24. In addition to information on the assessment method, background information must be considered: an indicator’s definition, significance and purpose, further analyses and correlations (e.g. information on the above-mentioned breaks which occur when indicators are updated). Information about links among topics and indicators is also important but often cannot yet be provided to a sufficient extent in indicator reports. The Expert Group concludes that “the most important advice ... is therefore not about the choice of a precise assessment method, but of a quite different nature: to avoid relying solely on the assessment method chosen. Indeed, it is much more important to consider the overall shape of the indicator and the context in which it is being assessed. This also means that one should avoid focusing only the assessment results in the form of pictograms (symbols), but that the indicator-based assessment process should include an analysis of the situation.”¹² The indicator reports for Germany follow a set structure: For each indicator they supply important basic elements of background information in addition to time series and assessments. A trade-off had to be settled in order to make the wealth of information manageable. Analyses can be made and links established especially where there is a consistent data basis. Integrated accounting systems have this potential and can be used e.g. with regard to the economy (national accounts) and the environment and economy (environmental-economic accounting).

¹¹ Eurostat Expert Group on Indicator Based Assessment: Getting messages across using indicators - A handbook based on experiences from assessing Sustainable Development Indicators, draft 2012, chapter 3.3, para. 977ff.

¹² Eurostat Expert Group 2012, loc. cit., draft chapter 3.3 (para. 992ff.)

IV. Conclusions for the global process

25. In the introduction, we referred to the Rio+20 Conference, in the wake of which an international body is to agree on a set of Sustainable Development Goals (SDGs) – if possible, by the end of 2013. This means that the global sustainability policy has to fulfil important tasks, and the statistical community will be able to make a contribution. The SDGs are to consider all three dimensions of sustainable development and apply to all countries in the world.

26. It is surely difficult to derive indications for the much more complex global process from national experience with sustainability strategies or the selection of well-being indicators. However, some general insights can be provided:

(a) The political and statistical communities have to play different parts when it comes to selecting indicators of sustainability or well-being. While politicians mainly determine the programme, define the standards and are responsible for the developments, statisticians focus on giving methodological advice, providing data and assuring the quality, making analyses and reporting on indicators in a descriptive manner.;

(b) In doing so, both – the political and statistical communities – have to co-operate in a process of on-going dialogue in order to achieve optimum results. Involving statisticians as early as possible is to the benefit of both parties;

(c) The statistical community must be independent in their reporting. In fact this is not only the fundamental prerequisite of official statistics, it also profits the credibility of the political community and the sustainability strategy;

(d) The binding character of an indicator-based political programme and the incentive to implement the programme increase considerably when quantitative target values and time frames are specified;

(e) Statisticians supply methods for objectively assessing the development of indicators in comparison with their targets. It is imperative that such assessment procedures be comprehensible and transparent and be communicated together with the results. This also holds for the indicators themselves, whose definitions must be revealed in the reports;

(f) Summaries of results and symbols for different indicator developments provide guidance and help to simplify the communication of messages. However, there mostly are complex matters underlying these simple messages. Therefore, the user must not look at indicator assessments without any context – symbols are no substitute for background information.